

REMARKS

This responds to the Office Action mailed on September 9, 2004.

Claims 1, 27, 33-36, 47, 51, 54, 63, 69-71, 82, 88-89 are amended. No claims are cancelled or added. As a result, claims 1-89 remain pending in this patent application.

§102 Rejection of the Claims

Claims 1-17, 19, 26-89 were rejected under 35 U.S.C. § 102(e) for anticipation by Shapiro et al. (US 2003/0014405 A1). Applicant respectfully overcomes this rejection, as discussed below. However, as an initial note, Applicant reserves the right to “swear behind” the Shapiro et al. reference in the future, as provided under 37 C.F.R. § 1.131, as well as all other applicable rights with respect to this § 102(e) reference.

First, Applicant summarizes Applicant’s present understanding of the Shapiro et al. reference. Shapiro et al. apparently accepts a user query and decomposes the user query into query terms. (*See* Shapiro et al. ¶23.) The query terms are apparently then presented to the user along with corresponding weights that represent its importance (*see id.* ¶25); such weights are computed as the product of the term frequency (TF) and the inverse document frequency (IDF). (*See id.* ¶ 23.) The user can apparently review the terms and their corresponding weights, and adjust the order of the listed terms, if desired. (*See id.* ¶25). FIGS. 7A and 7B of Shapiro et al. describe two alternative techniques for formulating searches.

In FIG. 7A of Shapiro et al., search terms from the list are apparently sequentially added into a conjunctive (e.g., Boolean “AND”) query. (*See id.* ¶28.) After each such addition of a query term from the list into the conjunctive query, a search is performed using that conjunctive query. The number of search results is then reviewed to determine whether the search has been completed satisfactorily, or if a further search term should be added to the conjunctive query for the next search iteration.

In FIG. 7B of Shapiro et al., a fixed number of query terms are apparently extracted from the list and used in a conjunctive search query. (*See id.* ¶29.) Various combinations of this fixed number of query terms yield different conjunctive search queries, which are then executed by a search engine.

In either such case, Shapiro et al. merely alters which query terms are used in a conjunctive query. Applicant submits that after the query terms to be used in a search query are selected, they will always yield the same result—because Shapiro et al. merely formulates a Boolean “AND” of the selected query terms. This provides only a very limited flexibility in the ability to vary the specificity of a search to quickly and effectively obtain the most relevant content. Next, Applicant discusses how the present patent claims are different from Shapiro et al.

Concerning claims 1 – 26:

Applicant cannot find in the cited portions of Shapiro et al. any disclosure of searching for relevant documents using at least one search criteria selected from a set of search criteria, the set of search criteria including at least two different search criteria defining different search specificities when using identical terms from the user query language, as presently recited or incorporated in claims 1 – 26. This allows far greater flexibility in obtaining variability in search specificity than Shapiro et al.

As discussed above, once Shapiro et al. has selected a particular combination of query terms to be used, it will always obtain the same search query results, because Shapiro et al. always takes a Boolean AND of the query terms selected. By contrast, the present patent application includes numerous examples of changing search criteria to obtain differing search specificity—even when identical search terms are used. For example, Table 1 of the present patent application lists different search criteria along a “textual dimension” that, for the same query terms, obtains different search specificities by varying Boolean search criteria (e.g., “AND” vs. “OR”) or proximity criteria, for example. (See Application at pages 16-17.) As an illustrative example, if the search query terms were “dog” and “cat” a query of (“dog” AND “cat”) will be more specific than a query of (“dog” OR “cat”), even though the same search query terms (“dog” and “cat”) are used in this example. Since Shapiro et al. always uses a conjunctive (i.e., Boolean “AND”) search query, it will always yield the same results for the same query terms.

In another example, Table 2 of the present patent application lists different search criteria along a “linguistic dimension” that, for the same query terms, obtains different search specificities by altering whether textual identity is required (e.g., between language in the search

query and language in a candidate document), or whether instead case variation, word form variation, and/or phrasal variation is allowed in performing the search query, for example. (*See id.* at 17.) In yet another example, Table 3 of the present patent application lists different search criteria along a “thesaurus dimension” that, for the same query terms, obtains different search specificities by altering whether an identical corresponding term is required to declare a match between a query term and a term in a candidate document, or whether synonyms and/or hypernyms are allowed. (*See id.* at 18) In an even further example, Table 4 of the present patent application lists different search criteria along a “document portions” dimension that, for the same query terms, obtains different search specificities by altering whether the query terms must be found in the document’s Title, Abstract, and/or the entire document. (*See id.* at 19) Applicant’s claimed techniques, therefore, are far more flexible than those of Shapiro et al. in forming an ordered list of search criteria of varying specificity. This helps quickly and effectively obtain content relevant to the user’s query. Because all elements of claims 1-26 are not present in Shapiro et al., Applicant respectfully requests withdrawal of this basis of rejection of claims 1 – 26.

Moreover, concerning dependent claim 8, Applicant also cannot find in the cited portion (i.e., ¶30) of Shapiro et al. any disclosure, teaching, or suggestion of ranking a particular document based at least in part on a weight with which the particular document is associated with a particular concept node in one of multiple taxonomies, as recited in claim 8. The present application explains in detail an example of how a knowledge map is created using taxonomies. (*See Application* at page 7, lines 1 – 12.) The documents are then tagged to relevant concept nodes, as illustrated in FIG. 2 of the present patent application. Claim 8 pertains to ranking search results at least in part by a weight associated with the tagging of a document to a concept node. Applicant cannot find any disclosure, teaching, or suggestion of this in the cited ¶ 30 of Shapiro et al. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 8.

Concerning dependent claim 12, Applicant also cannot find in the cited portion (i.e., ¶28, lines 24-29) of Shapiro et al. any disclosure, teaching, or suggestion of using an approximately binary divide-and-conquer traversal of the search ordering, as recited in claim 12. In fact, the cited portion of Shapiro et al. apparently directly teaches away from a binary divide-and-conquer

traversal of the search ordering because it pertains to FIG. 7A of Shapiro et al., which at block 705 describes sequentially adding the next search term in an apparently linearly ordered list. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 12.

Concerning dependent claims 15-17, Applicant also cannot find in the cited portion (i.e., ¶25, lines 4 – 12) of Shapiro et al. any disclosure, teaching, or suggestion of classifying the user query into a query class, and selecting a search strategy based on the query class in which the user query is classified, as recited in claim 15. Instead, the cited portion of Shapiro et al. apparently merely pertains to receiving user input for modifying and refining the user query before proceeding to the search process. Accordingly, Applicant respectfully requests clarification or withdrawal of this basis of rejection of claims 15-17.

Concerning dependent claims 16-17, Applicant also cannot find in the cited portion (i.e., ¶29) of Shapiro et al. any disclosure, teaching, or suggestion of classifying the user query into a query class based on how many information-bearing terms are obtained from the user query or how many words are included in such information-bearing terms, along with then selecting the search strategy based on the query class, as recited or incorporated in claim 16. Instead, the cited portion of Shapiro et al. apparently merely pertains to forming subsets of search queries from user query terms, and then performing the same search strategy (e.g., a conjunctive query) on each such subset. Accordingly, Applicant respectfully requests clarification or withdrawal of this basis of rejection of claims 16-17.

Concerning dependent claim 17, Applicant also cannot find in the cited portion (i.e., ¶ 25) of Shapiro et al. any disclosure, teaching, or suggestion of classifying a user query into query classes that include a first query class when the user query includes a single information-bearing term, a second query class when the user query includes between two and three information-bearing terms, inclusive, a third query class when the user query includes more than three information-bearing terms without any accompanying noninformation-bearing stopwords, and a fourth query class in which the user query includes more than three information-bearing terms and at least one noninformation-bearing stopword. Instead, the cited portion of Shapiro et al. apparently merely pertains to receiving user input for modifying and refining the user query before proceeding to the search process, without classifying the user query to a query class, and

without including the four specific user classes expressly recited in claim 17. Accordingly, Applicant respectfully requests withdrawal of this basis of claim 17.

Concerning claims 27 – 46:

Applicant cannot find in the cited portions of Shapiro et al. any disclosure of using an ordered list, S1, S2, . . . , SN, of at least two searches, each search using at least one search criteria that is different from the other searches, the search criteria selected from a multidimensional set of search criteria, the set of search criteria including at least two different dimensions representing different approaches of varying search specificity, as presently recited or incorporated in claims 27 – 46. This allows far greater flexibility in obtaining variability in search specificity than Shapiro et al.

As discussed above, Shapiro et al. apparently always varies search specificity in the same way, i.e., by selecting different query terms to use in a conjunctive (“Boolean AND”) search. This limits the flexibility available for obtaining searches of varying specificity. By contrast, the present application describes examples of different “dimensions” along with search criteria can be organized, each such “dimension” representing a different approach to varying the search specificity. For example, Table 1 of the present patent application lists different search criteria within a “textual dimension” that varies the search specificity by varying Boolean search criteria (e.g., “AND” vs. “OR”) or proximity criteria (e.g., how close to each other the query terms must be in a candidate document in order for that document to be declared a match/hit, for example. Table 2 of the present patent application lists different search criteria along a “linguistic dimension” that varies the search specificities by altering whether textual identity is required (e.g., between language in the search query and language in a candidate document), or whether instead case variation, word form variation, and/or phrasal variation is allowed in performing the search query. The “linguistic dimension” represents a different approach to varying search specificity than the “textual dimension” discussed above. Table 3 of the present patent application lists different search criteria along a “thesaurus dimension” that varies search specificities by altering whether an identical corresponding term is required to declare a match between a query term and a term in a candidate document, or whether synonyms and/or hypernyms are allowed. The “thesaurus dimension” represents a different approach to varying search specificity than either of the “linguistic” and “textual” dimensions discussed above. Table

4 of the present patent application lists different search criteria along a “document portions” dimension that varies search specificities by altering whether the query terms must be found in the document’s Title, its Abstract, and/or the entire document. Thus, the “documents portions” dimension represents a different approach to varying search specificity than any of the “linguistic,” “textual,” or “thesaurus” dimensions discussed above. In sum, because Applicant cannot find any disclosure, teaching, or suggestion of using multidimensional search criteria, Applicant respectfully requests withdrawal of this basis of rejection of these claims.

Concerning claim 33, Applicant also cannot find in the cited portion (§2, lines 7-12 and §25, lines 6-7) of Shapiro et al. any disclosure, teaching, or suggestion of a more specific search criteria that uses an at least approximately more exact matching of a particular term from the user query to language in the documents, and the more general search criteria uses an at least approximately less exact matching of the particular term from the user query to language in the documents, as recited in claim 33. Instead, Shapiro et al. apparently uses different subsets of query terms in a conjunctive query, without varying the exactness of a match between a query term and a corresponding candidate term in a candidate document. As an illustrative example taken from the present patent application, as discussed above, allowing word form variation is a less specific matching than requiring the exact word form of a query term to appear identically in the candidate document in order to declare a match. Although Shapiro et al. apparently uses different subsets of query terms in a conjunctive query, Applicant cannot find any disclosure, teaching, or suggestion in the cited portions of Shapiro et al. of varying search specificity by how exact the matching must be between a particular query term and a corresponding candidate term in a candidate document. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 33.

Concerning claim 34, Applicant also cannot find in the cited portion (§25, lines 1-3) of Shapiro et al. any disclosure, teaching, or suggestion of varying a search criteria among at least two of a textual dimension, a linguistic dimension, or a thesaurus dimension, as recited in claim 34, and as discussed above. Accordingly, Applicant respectfully requests clarification or withdrawal of this basis of rejection of claim 34.

Concerning claims 35 and 37, Applicant also cannot find in the cited portion (§28, lines 6-7) of Shapiro et al. any disclosure, teaching, or suggestion of a search criteria that specifies at

least one predefined portion of the documents to be used in carrying out the search, as presently recited in claim 35. Instead, the cited portion of Shapiro et al. apparently pertains to specifying a number of query terms to be used in the search query. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 35 and 37.

Concerning claim 36, Applicant also cannot find in the cited portion (§25, lines 27-29) of Shapiro et al. any disclosure, teaching, or suggestion of an at least approximately more specific search criteria that uses a more specific portion of the documents, and an at least approximately more general search criteria that uses a less specific portion of the documents, as recited in claim 36. The present patent application gives examples of such document portions (e.g., Title, Abstract, Entire Document), such as in Table 4 on page 19. However, it appears to the Applicant that the cited portion (§25, lines 27-29) is not even present in Shapiro et al. Accordingly, Applicant respectfully requests clarification or withdrawal of this basis of rejection of claim 36.

Concerning claim 41, Applicant also cannot find in the cited portion (§31, lines 1-5) of Shapiro et al. any disclosure, teaching, or suggestion of ranking a particular document based at least in part on a weight with which the particular document is associated with a particular concept node, as recited in claim 41. The present application explains in detail an example of how a knowledge map is created using taxonomies. (See Application at page 7, lines 1 – 12.) In this example, the documents are then tagged to relevant concept nodes, as illustrated in FIG. 2 of the present patent application. Since the cited portion of Shapiro et al. apparently does not describe ranking a document based at least in part on a weight with which the particular document is associated with a particular concept node, as recited in claim 41, Applicant respectfully requests withdrawal of this basis of rejection of this claim.

Concerning claim 43, Applicant also cannot find in the cited portion (§ 29) of Shapiro et al. any disclosure, teaching, or suggestion of classifying the user query, and in which forming the ordered list based at least in part on the user query includes forming the ordered list based at least in part on the classification of the user query, for the reasons discussed above with respect to claim 15. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 43.

Concerning claims 47-53:

Applicant cannot find any disclosure, teaching, or suggestion in Shapiro et al. of using search criteria that is selected from a set of search criteria that includes at least two different search criteria that specify different regions of the document to be used in carrying out the search, as presently recited or incorporated in claims 47-53, for the reasons already discussed above with respect to 35-37, for example. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of these claims.

Concerning claim 50, Applicant also cannot find any disclosure, teaching, or suggestion in the cited portion (¶ 31, lines 6-8) of Shapiro et al. of ranking a particular document based at least in part on a weight with which the particular document is associated with a particular concept node, as recited in claim 50, for the reasons already discussed above with respect to claim 41, for example. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 50.

Concerning claim 51, Applicant also cannot find any disclosure, teaching, or suggestion in the cited portion (¶2 lines 7-12 and ¶25, lines 6-7) of Shapiro et al. of a more specific search criteria that uses an at least approximately more exact matching of a particular term from the user query to language in the documents, and an at least approximately more general search criteria that uses an at least approximately less exact matching of a particular term from the user query to language in the documents, as presently recited in claim 51, for the reasons already discussed above with respect to claim 33, for example. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 51.

Concerning claims 54-81:

Applicant cannot find any disclosure, teaching, or suggestion in Shapiro et al. of a search query generator, coupled to the user query input, the search query generator to generate a search using the user query to formulate corresponding search criteria selected from a set of search criteria, the set of search criteria including at least two different search criteria defining different search specificities when using identical terms from the user query language, as presently recited or incorporated in claims 54-81, for the reasons already discussed above with respect to claims 1-26. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 54-81.

Concerning claim 58, Applicant also cannot find any disclosure, teaching, or suggestion in the cited portion (§ 30) of Shapiro et al. of a system that includes a knowledge corpus including documents associated with concept nodes arranged in multiple taxonomies, and in which the result ranking engine ranks a particular document based at least in part on a weight with which the particular document is associated with a particular concept node, as recited in claim 58, for the reasons already discussed above with respect to claim 8, for example. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 58.

Concerning claim 68, Applicant also cannot find in the cited portion (§25, lines 1-3) of Shapiro et al. any disclosure, teaching, or suggestion of a specificity of search criteria that varies along at least one of a textual dimension, a linguistic dimension, and a thesaurus dimension, as recited in claim 68, for the reasons already discussed above with respect to claim 34, for example. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 68.

Concerning claim 69, Applicant also cannot find in the cited portion (§2 lines 7-12 and §25, lines 6-7) of Shapiro et al. any disclosure, teaching, or suggestion of an at least approximately more specific search criteria that uses at least approximately more exact matching between a particular term in user query language and document language, and an at least approximately more general search criteria that uses at least approximately less exact matching between a particular term in user query language and document language, as presently recited in claim 69, for the reasons already discussed above with respect to claim 33, for example. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 69.

Concerning claims 70-72, Applicant also cannot find in the cited portion (§28, lines 6-7) of Shapiro et al. any disclosure, teaching, or suggestion of a search criteria that specifies at least one predefined portion of the documents to be used in carrying out the search, as presently recited or incorporated in claims 70-72, for the reasons already discussed above with respect to claim 35, for example. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 70-72.

Concerning claims 71-72, Applicant also cannot find in the cited portion (§25, lines 27-29) of Shapiro et al. any disclosure, teaching, or suggestion of an at least approximately more specific search criteria that uses a more specific portion of the documents, and an at least

approximately more general search criteria that uses a less specific portion of the documents, as presently recited or incorporated in claims 71-72, for the reasons already discussed above with respect to claim 36, for example. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 71-72.

Concerning claim 72, Applicant also cannot find in the cited portion (§25, lines 27-28) of Shapiro et al. any disclosure, teaching, or suggestion of a predefined portion of that uses at least one of a title portion, a summary portion, and an abstract portion, where the search criteria specifies such predefined portion of the documents to carry out the search, for the reasons already discussed above with respect to claim 37, for example. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 72.

Concerning claim 76, Applicant also cannot find in the cited portion (§31, lines 1-5) of Shapiro et al. any disclosure, teaching, or suggestion of including a knowledge corpus including documents associated with concept nodes arranged in multiple taxonomies, and in which the result ranking engine ranks a particular document based at least in part on a weight with which the particular document is associated with a particular concept node, as recited in claim 76, for the reasons already discussed above with respect to claim 8, for example. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 76.

Concerning claims 82-89:

Applicant cannot find in Shapiro et al. any disclosure, teaching, or suggestion of using a set of search criteria that includes at least two different dimensions representing different approaches of varying search specificity, as presently recited or incorporated in claims 82-89, for the reasons already discussed above with respect to claim 27, for example. (As an additional note, Applicant cannot find in the Office Action any particularized explanation of the rejection of claim 82). Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 82-89.

Concerning claim 83, Applicant also cannot find in the cited portion (§25, lines 1-6) of Shapiro et al. any disclosure, teaching, or suggestion of using a list that is ordered according to a varying specificity along each particular dimension, while holding specificity of other dimensions constant, where the dimensions include at least two different dimension representing different approaches of varying search specificity, as presently recited or incorporated in claim

84. As discussed above, Shapiro et al. apparently merely chooses different combinations of query terms for a conjunctive (Boolean AND) search query. This represents a single approach of varying search specificity; it does not use different dimensions representing different approaches of varying search specificity. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 83.

Concerning claim 86, Applicant also cannot find in the cited portion (§28, lines 18-26) of Shapiro et al. any disclosure, teaching, or suggestion of moving to and performing another search in the list, including moving through the list in an at least approximately binary strategy that divides a portion of the list to be searched into two segments and selects a particular segment of the list based on an evaluation of the search results, as recited in claim 86, for the reasons already discussed above with respect to claim 12. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 86.

Concerning claims 87-88, Applicant also cannot find in the cited portion (§25) of Shapiro et al. any disclosure, teaching, or suggestion of an ordered list that is one of a plurality of ordered search lists that are mapped to query classes, and further including evaluating the user query for classification into a particular one of the query classes and using an ordered search list corresponding to said particular one of the query classes, as recited or incorporated in claims 87-88, for the reasons already discussed above with respect to claim 15. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 87-88.

Concerning claim 88, Applicant also cannot find in the cited portion (§32) of Shapiro et al. any disclosure, teaching, or suggestion of automatically reclassifying a user query to a different one of the query classes if results of a performed search provide an indication for such a reclassification, as presently recited in claim 88. Instead, the cited portion of Shapiro et al. apparently involves merely giving the user a choice to reformulate the search or to perform a new search. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 88.

Concerning claim 89, Applicant also cannot find in the cited portions (§25 and §32) of Shapiro et al. any disclosure, teaching, or suggestion of automatically switching to a different one of the ordered lists if results of a performed search provide an indication for such a switching. Instead, the cited portion of Shapiro et al. apparently involves merely giving the user

a choice to reformulate the search or to perform a new search. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 89.

Allowable Subject Matter

Claims 18, 20-25 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Nevertheless, for the reasons discussed above, Applicant believes that these claims are allowable in their present form. Accordingly, Applicant respectfully requests early allowance of these claims 18 and 20-25.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6951 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

MAX COPPERMAN ET AL.

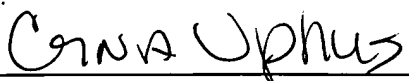
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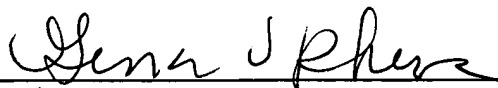
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